

**Amendment and Response**

Serial No.: 10/019.643

Confirmation No.: 1109

Filed: March 20, 2002

For: METHOD AND COMPOSITION FOR AFFECTING REPRODUCTIVE SYSTEMS**Amendments to the Claims**

This listing of claims replaces all prior versions, and listings, of claims in the above-identified application:

1.-3. (canceled)

4. (currently amended) A method for treating or preventing a reproductive disease, disorder, or condition related to egg production or egg laying in a bird comprising administering to the bird an immunogenic composition comprising a polypeptide comprising a heterologous zona pellucida protein or an immunogenic fragment thereof.

5. (canceled)

6. (previously presented) The method of claim 4 wherein the reproductive disease, disorder or condition is selected from the group consisting of egg-binding disease, dystocia, egg-related peritonitis, oophoritis, prolapsed oviduct and cloaca, salpingitis, metritis, oviduct impaction, cloacal problems, ectopic egg formation, chronic egg laying and undesirable behavior as a result of reproductive activity or reproductive problems.

7.-11. (canceled)

12. (previously presented) The method of claim 4 wherein the zona pellucida protein is a glycoprotein.

13. (previously presented) The method of claim 4 wherein the zona pellucida protein is a naturally occurring protein.

14. (previously presented) The method of claim 4 wherein the zona pellucida protein is a

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recombinant protein or synthetic protein.

15. (currently amended) The method of claim 4 wherein the zona pellucida protein is ~~comprises at least one zona pellucida protein selected from the group consisting of a porcine zona pellucida protein and an avian zona pellucida protein.~~
16. (previously presented) The method of claim 4 wherein the polypeptide further comprises a T cell epitope, a helper T cell epitope or a B cell epitope.
17. (previously presented) The method of claim 4 wherein the immunogenic composition further comprises an adjuvant.
18. (original) The method of claim 17 wherein the adjuvant is selected from the group consisting of Freund's Complete Adjuvant, Freund's Incomplete Adjuvant, Freund's mycotoxin-free adjuvant, aluminum hydroxide, a cell wall extract derived from non-pathogenic *Mycobacteria* spp., a long-chain polydispersed  $\beta(1,4)$  linked mannan polymer interspersed with O-acetylated groups, permulum and synthetic trehalose dicorynomycolate (STDCM).
19. (original) The method of claim 18 wherein the adjuvant is selected from the group consisting of aluminum hydroxide and STDCM.
20. (previously presented) The method of claim 18 wherein the adjuvant is aluminum hydroxide.
21. (previously presented) The method of claim 4 wherein the immunogenic composition excludes an adjuvant.
22. (canceled)

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23. (currently amended) The method of claim 4 wherein the immunogenic composition comprises a heterologous zona pellucida protein or immunogenic fragment thereof.

24.-26. (canceled)

27. (currently amended) The method of claim 4 wherein the immunogenic composition comprises an immunogenic conjugate comprising a heterologous zona pellucida protein or a fragment thereof, conjugated to a carrier molecule.

28. (previously presented) The method of claim 27 wherein the immunogenic conjugate is dually functional.

29. (currently amended) A method for affecting the reproductive system of a bird comprising administering to the bird an immunogenic composition comprising an immunogenic conjugate comprising a heterologous zona pellucida protein or fragment thereof conjugated to a carrier molecule.

30.-40. (canceled)

41. (new) The method of claim 4 wherein the immunogenic composition further comprises an avian zona pellucida protein or fragment thereof .

42. (new) The method of claim 17 wherein the adjuvant is a non-oil adjuvant.

43. (new) The method of claim 18 wherein the adjuvant is STDm.